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ABSTRACT

This empirical study evaluated several factors believed to be related to job satisfaction: teachers' own attitudes toward pupil control, teachers' perceptions of their colleagues and, principals' attitudes toward pupil control. Coefficients of correlation,, t-tests of selected variables, and multivariate regression techniques were used in testing hypothesized relationships. The data was obtained from 910 teachers: 473 elementary and 437 secondary. Teacher job satisfaction was found to be a function of subculture consensus with respect to pupil control idealogy, accentuated in terms of teaching level and experience. Forty percent of the variability of job satisfaction was accounted for by using internal-reward-type independent variables. The study of teacher job satisfaction holds several significant implications for the administrator-teacher-student relationship. Degree of teacher job satisfaction is one determinant of the social climate of the school because productive teaching-learning coexists with congruent administrator-teacher educational philosophy. Identification of those factors which influence teacher job satisfaction is most important to administrative practice, for each factor can be incorporated into the administrative process to guide the selection, management, and evaluation of instructional personnel. A bibliography is included. Appendixes contain multivariate rationale and procedures, and variable definitions. (Author/MJM)

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JOB SATISFACTION OF THE PUBLIC SCHOOL TEACHER, A FUNCTION OF SUBCULTURE CONSENSUS WITH RESPECT TO PUPIL CONTROL IDEOLOGY

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JOB SATISFACTION OF THE PUBLIC SCHOOL TEACHER, A FUNCTION OF SUBCULTURE CONSENSUS WITH RESPECT TO PUPIL CONTROL IDEOLOGY

Heuristically, the public school can be perceived as a social system within which meaningful differences in administrator-teacher, teacher-teacher, and teacher-pupil interactions can occur. These social interactions are regulated in part by normative attitudes within the teacher subculture regarding behavioral restraints (control) of pupils. Several reports, including those by Waller (1932), Gordon (1955), Vredovoe (1965), and Willower (1967), have called attention to teacher norms for pupil control in the educational setting. Teacher-subculture pupil control ideology and supporting or conflicting attitudes of teachers appear to be salient features of school life and are important enough in the teacher subculture to have a significant impact on teacher job satisfaction.

The concern of industry with employee job satisfaction and its relationship to a worker's involvement with his job, his relationship with his colleagues, and other situational factors of the job, has provided some historical continuity to the study of teacher job satisfaction. However, the dimensions of job satisfaction in both settings have not been demonstrated to be the same. Hoppock (1935) conducted an extensive study of job satisfaction across various occupational categories. Extensive research on teacher job satisfaction has concentrated on such varied relationships as participation in policy-making (Chase, 1951), productivity (Kahn, 1960), decision-making (Sharma, 1955), past experience (Guba, 1958), and respect from students (Rettig and Pasamanick, 1959). In addition, Herzberg (1959)

combined the views of satisfaction and dissatisfaction into a unified theory in which certain job characteristics caused people to be satisfied (achievement, recognition, the work itself, responsibility, advancement) and conversely, those job characteristics that caused people to be dissatisfied (company policy and administration, supervision-technical, salary, interpersonal relations with supervisors and working conditions). Vocational satisfaction in education should not be assumed uniquely different from other managerial-supervisory encounters.

The investigation reported here represents an extension and adaptation of the Zaleznik and Moment "Sources of Satisfaction" model. In this scheme the organizational situation serves the individual as a source of external reward (money, status, job interest, advancement, etc.) and internal reward (emotional support, friendship, help, relationships with associates, etc.). Interpersonal relationships associated with group membership, therefore, can be categorized as internal as opposed to external--external rewards being those derived from the formal organization of the operating social system. Although job satisfaction is dependent upon both internal and external rewards, this study focuses on those internal-reward factors hypothesized to be determinants of teacher job satisfaction prevalence and magnitude.

The purpose of this empirical study was to evaluate several factors believed related to job satisfaction: teachers' own attitudes toward pupil control, teacher perceptions of their colleagues' attitudes toward pupil control, and teacher perceptions of their principal's attitudes toward pupil control. Specifically, two main hypotheses were evaluated:

1. Teacher job satisfaction is directly related to the congruence between teacher held pupil control ideologies and the pupil control ideologies of colleagues, as perceived by the teacher.

2. Teacher job satisfaction is directly related to the congruence between teacher held pupil control ideologies and the pupil control ideologies of their principal, as perceived by the teacher.

In addition, pupil control ideology and job satisfaction data were evaluated with respect to the variables of teaching level and teaching experience. Biographic and demographic information on each sample element was used in conjunction with pupil control ideology and congruence data to construct a multivariate predication relationship, where job satisfaction (SAT) was the criterion variable.

A MODEL FOR PREDICTING JOB SATISFACTION AS A FUNCTION OF INTERNAL REWARD

Satisfaction has been described by Zaleznik (1964, especiallly p. 379ff) in terms of rewards and wants

$$\text{Satisfaction} = f\left(\frac{\text{rewards}}{\text{wants}}\right)$$

> What the individual wants from the situation is determined by his personal history of rewards and deprivations....What he receives from the situation is a function of his behavior and the behavior of the other persons in his environment, as constrained by the organizational and cultural systems. Once involved...the individual's wants become modified further in the process of being rewarded and deprived; experiences in the organizational setting become part of the individual's personal history. (p. 380)

In the present study internal rewards were approximated by the proxy congruence--consensus--as expressed in terms of subculture associations. Namely, it was supposed that persons would derive some portion of their individual measure of job satisfaction from the congruence between their personal beliefs and those held by others with whom they--the sample elements--

interacted on a regular basis. Some fraction of the portion of satisfaction attributable to all internal-type rewards has been evaluated; and external-type rewards pointedly have been excluded from consideration.

It was hypothesized that observed satisfaction scores would be higher where consensus relative to pupil-control ideology was found. The theoretical model, developed for analysis purposes, is presented as Figure 1. This model for teacher job satisfaction was adapted from the Zaleznik internal-external reward scheme. The scheme has been expanded to include important personal variables of the teacher and interactions of the teacher within the social system of the school.

The completed model depicts the public school as a subsystem of our existing social system outside the school. Individual teachers become part of this subsystem of interactive, informal relationships. In the model above five sets of social relationships can be identified: teacher-colleagues interaction (a); colleagues-principal interaction (b); principal-students interaction (c); students-teacher interaction (d); and teacher-principal interaction (e). The principal-students interaction (c) is represented by a broken line because of less direct social contact between them. The model also includes personal variables characterizing the teacher; e.g., sex, age, marital status, etc., that may or may not be important determinants of job satisfaction. In addition, the formal organization of the school serves the teacher as a source of job satisfaction relative to the rewards he receives, categorized in the model as (A) internal and (B) external (defined in an earlier part of this report).

Primarily, but not exclusively, two relationships indicated in the

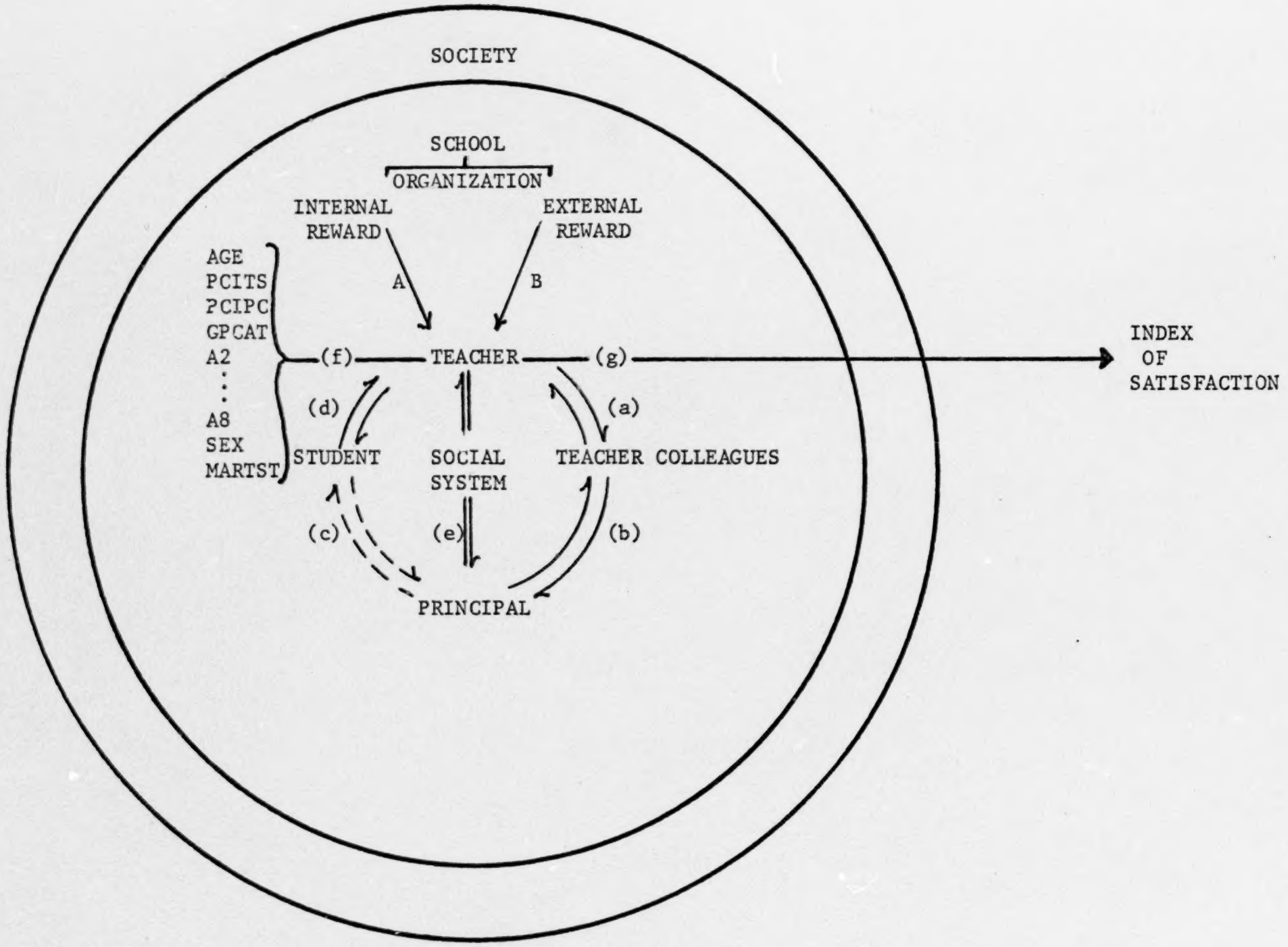

Figure 1. Causative Interaction Model Leading To An Index Of Job Satisfaction

general model are examined in this study. Teacher interactions with colleagues (a) and with the principal (e), (tested in terms of hypotheses 1 and 2). In addition, the effect of personal variables of teachers as related to job satisfaction (f) have been investigated within the framework of the influence of internal rewards derived from the school environment upon job satisfaction (A). To a lesser degree, teacher colleagues-principal (b) and students-teacher (d) interactions are considered. Though no effort was made here to examine the influence of external rewards upon teacher satisfaction (b) or the indirect relationship between principal and students (c), these influences are not considered less important as probable, additional determinants of teacher job satisfaction.

PROCEDURE

Pupil control ideology was operationally defined for the purpose of this study in terms of the Pupil Control Ideology Form (PCI Form) developed by Willower (1967). Teacher control orientation was measured on a continuum of pupil control that ranged from custodial to humanistic: teachers holding a custodial orientation perceive the school as a highly structured organization where students must be controlled through the impersonal mechanisms of punitive sanctions; teachers holding a humanistic orientation perceive the school as a loosely structured organization in which students are perceived as being more self-controlled. The PCI Form consists of twenty items with five Likert-type response categories in relation to end-points of custodial or humanistic orientation. The higher the score, the more

custodial the individual is determined to be; the lower the score, the more humanistic. Data relevant to the orientation definitions and to the validity and reliability of the PCI Form are available in the literature (Willower, 1967) and will not be presented in depth here.

Teacher job satisfaction was defined operationally as a general measure of job satisfaction determined by scores from the Index of Job Satisfaction developed by Brayfield and Rothe (1951). This index was developed to provide a global appraisal of job satisfaction applicable across occupational categories. This 18-item instrument was designed to measure the individual's attitude toward his work. Attributes considered desirable by the authors were as follows:

1. The instrument should give an index to "over-all" job satisfaction rather than to specific aspects of the job situation.
2. It should be applicable to a wide variety of jobs.
3. It should be sensitive to variations in attitude.
4. The items should be of such a nature (interesting, realistic, and varied) that the scale would evoke cooperation from both management and employees.
5. These items should yield a reliable index.
6. They should yield a valid index.
7. They should be brief and easily scored.

The instrument consists of five response categories for each item utilizing the Likert scoring system. A low total score represents a dissatisfied respondent; a high total score represents a satisfied respondent. Reliability and validity of the Job Satisfaction Index were calculated on the basis of the 18-item revised version of the instrument. The odd-even product-moment reliability coefficient in a sample of female office employees (N=231) was 0.77 and when corrected by application of the well-known Spearman-Brown formula was 0.87. In validating the job satisfaction instrument,

91 adult night school students in Personnel Psychology were administered the test. A mean score of 70.4 and standard deviation of 13.2 were calculated. The total sample was then divided into two groups--personnel and non-personnel--with respect to their employment position. The Behrens'-Fisher technique was applied for testing of differences of means and respective variances between the two groups. Differences between means and variances were found to be significant at the 0.01 level. The product-moment correlation between scores on the Hoppock Job Satisfaction Blank and on the Brayfield-Rothe Blank was 0.92 (Brayfield, 1957).

Public school classroom teachers in six school districts located in the Commonwealth of Pennsylvania were the units for investigation. Two urban, two rural, and two suburban school systems were sampled. Samples were drawn from elementary and secondary classroom teachers in each of the districts; 910 usable survey instruments--473 elementary and 437 secondary--were analyzed.

Respondents were requested to complete a questionnaire consisting of four forms from which the obtained values were defined as follows:

1. PCITS - teacher-self pupil control ideology score.
2. PCIPC - teacher-perceived pupil control ideology score of colleagues.
3. PCIPP - teacher-perceived pupil control ideology score of the principal.
4. SAT - teacher job satisfaction score.

For the analyses two additional scores were derived from the primary measures.

1. CS1 - a congruency score that is the absolute value of the difference between PCITS and PCIPC.

$$CS1 = |PCITS - PCIPC|$$

2. CS2 - a congruency score that is the absolute value of the difference between PCITS and PCIPP.

$$CS2 = |PCITS - PCIPP|$$

The analysis of the data consisted of:

(1) tests for the degree of covariability for each proposed hypothesis by a Pearson product-moment coefficient of correlation. Coefficients of correlation were the bases for evaluating all bivariate distribution relationships. CS1 scores were correlated with SAT scores. CS2 scores were correlated SAT scores. Coefficients of determination (r^2) were also calculated to measure the degree of closeness or variability of the proposed relationship. For each of the hypotheses the appropriate r was evaluated.

(2) t-tests for the difference between the means of two non-correlated samples. The test was employed to compare mean scores of PCITS, PCIPC, PCIPP, and SAT on the basis of teaching level and teaching experience. The test used the lowest frequency minus one as the number of degrees of freedom in cases having unequal N's. Two-tailed tests of significance were employed. In all cases, the probability of making a Type I error was set at the 0.05 level.

(3) evaluation of SAT scores in terms of a multivariate analysis, where the "main effects"--those variables observed to be directly related to SAT--were evaluated using ordinary least squares linear regression techniques. See APPENDIX A for an overview of the multivariate procedures.

FINDINGS

Relative to CS1 (teacher-colleague congruence), agreement between the pupil control ideology of a teacher and his perception of the pupil control ideology held by colleagues shows a strong relationship to that teacher's level of job satisfaction. Teachers tend to derive a higher degree of satisfaction from their professional activities when they perceive colleagues as exhibiting a control orientation that is in close agreement with their own control orientation--either humanistic or custodial. When a teacher's perception of his colleague's control orientation strongly disagrees with his own control orientation, he derives less satisfaction from his activities as an educator. Table 1 summarizes the relevant data in testing the first hypothesis. Tables 2 and 3 extend the first hypothesis to separate levels, elementary and secondary groups. Note that the negative relationship observed between CS1 and SAT is a function of the scaling of CS1, where increasing divergence between PCITS and PCIPC is associated with decreasing SAT values. About 18% of the variability in SAT values can be attributed to CS1. This fundamental relationship is observed at both instructional levels, although it is considerably stronger when referring to elementary teachers.

With respect to CS2 (teacher-principal congruence), the data indicate that agreement between the pupil control ideology a teacher holds and his perception of the pupil control ideology held by his principal has a strong relationship to the teacher's job satisfaction. This is somewhat stronger than in the CS1 evaluation. Teachers who perceive their principal

TABLE 1

CONGRUENCY SCORE 1 AND JOB SATISFACTION
OF CLASSROOM TEACHERS

Variable	N	r	r^2	Level of Significance
Congruency Score 1 (CS1)[a]				
	910	-43	18	0.001
Job Satisfaction (SAT)				

[a]Absolute value of difference between teacher held pupil control ideology and teacher-perceived pupil control ideology of their colleagues.

[b]All correlations are reported without leading zero and decimal point.

TABLE 2

CONGRUENCY SCORE 1 AND JOB SATISFACTION
OF ELEMENTARY CLASSROOM TEACHERS

Variable	N	r	r^2	Level of Significance
Congruency Score 1 (CS1)				
	473	-50	25	0.001
Job Satisfaction (SAT)				

TABLE 3

CONGRUENCY SCORE 1 AND JOB SATISFACTION
OF SECONDARY CLASSROOM TEACHERS

Variable	N	r	r^2	Level of Significance
Congruency Score 1 (CS1)				
	437	-35	12	0.001
Job Satisfaction (SAT)				

as holding a control orientation similar to their own will tend to be more satisfied. Divergence in pupil control ideology perceived by a teacher with regard to his principal tends to be associated with a low degree of teacher job satisfaction. Tables 4 through 6 outline the pertinent data in relation to testing of the second hypothesis. The fundamental relationship observed for CS1-SAT was replicated for CS2-SAT, and the magnitude by level factor also was replicated. The association is considerably greater for elementary teachers, where $r^2 = 0.32$.

Thus, for the present sample each of the theoretical positions underlying two hypotheses was supported empirically. A teacher can be either humanistically or custodially oriented in his attitude toward pupil control, but the more closely a teacher's control orientation is related to his perception of his colleagues' and/or his principal's control orientation, the greater the likelihood that the teacher will be satisfied with his job. Conversely, the more divergent a teacher's personal and perceived control orientation is from his colleagues' and/or principal's, the less likely the teacher will be satisfied with his job. Given that job satisfaction is a viable concern, teachers should, therefore, be assigned to stations where similar control orientation, with respect to all faculty--including administrators--would be readily ascertained.

Willower (1967) has shown that secondary teachers are more custodial in pupil control ideology than elementary teachers. The mean scores for elementary and secondary teachers in this study as presented in Table 7 support this proposition. The PCI mean scores of these groups ($\bar{X} = 52.84$ and $\bar{X} = 59.47$, respectively) were significantly different at the 0.001 level using a t-test for difference between means of two independent samples.

TABLE 4

CONGRUENCY SCORE 2 AND JOB SATISFACTION
OF CLASSROOM TEACHERS

Variable	N	r	r^2	Level of Significance
Congruency Score 2 (CS2)[a]				
	910	-50	25	0.001
Job Satisfaction (SAT)				

[a]Absolute value of difference between teacher held pupil control ideology and teacher-perceived pupil control ideology of their principal.

TABLE 5

CONGRUENCY SCORE 2 AND JOB SATISFACTION
OF ELEMENTARY CLASSROOM TEACHERS

Variable	N	r	r^2	Level of Significance
Congruency Score 2 (CS2)				
	473	-56	32	0.001
Job Satisfaction (SAT)				

TABLE 6

CONGRUENCY SCORE 2 AND JOB SATISFACTION
OF SECONDARY CLASSROOM TEACHERS

Variable	N	r	r^2	Level of Significance
Congruency Score 2 (CS2)				
	437	-45	21	0.001
Job Satisfaction (SAT)				

Teacher perceptions of their faculty and their principal with regard to pupil control orientation indicated a consistent, patterned relationship for elementary and secondary teachers. For each group the colleagues were perceived as more custodial than the perceiver.

TABLE 7

PUPIL CONTROL IDEOLOGY OF TEACHERS GROUPED BY PRESENT POSITION

Position	N	Standard Error Squared	Mean PCI Score
Elementary Teacher	473	0.174	52.84
Secondary Teacher	437	0.215	59.47

$t = 10.64$, d.f. = 436, $p < 0.001$

The principal was perceived as more custodial than the perceiver, but less custodial than colleagues. A comparison of PCI mean scores, perceived PCI mean scores of colleagues, and perceived PCI mean scores for the principal in Tables 8 and 9 indicates this relationship. Differences in mean scores, tested by the t-test, were significant at the 0.001 level for both the elementary and secondary teachers. It is also important to note that the secondary teachers were consistently more custodial than elementary teachers in their perceptions of colleagues and principal. In the present sample secondary teachers ($\bar{X} = 62.20$) were more custodial than elementary teachers ($\bar{X} = 59.70$) in their perceptions of the principal.

Results from data collected in this investigation support previous research conducted on pupil control ideology in relation the variable of

teaching experience. Research has indicated that experienced teachers tend to be more custodial in their pupil control ideology than less experienced teachers (Willower, 1967). For purposes of this study, responses were compared for teachers reporting less than five years teaching experience with those reporting five years or more experience. The two-category breakdown of the experience variable was chosen at the stated levels because the socialization process presumably would become sufficiently stabilized for teachers having five years or more experience. Table 10 summarizes the relevant data. PCI mean scores for teachers having less than five years experience ($\overline{X}$ = 52.83) were found to be less custodial than teachers with five years or more experience ($\overline{X}$ = 57.83). This difference was significant at the 0.001 level. Thus, the data support the original experience proposition in the expected direction.

TABLE 8

PERCEIVED PUPIL CONTROL IDEOLOGY OF COLLEAGUES AND PRINCIPAL BY ELEMENTARY TEACHERS

Variable	Standard Error Squared	Mean PCI Score
Pupil Control Ideology (PCITS)	0.174	52.84
Perceived Pupil Control Ideology of Colleagues (PCIPC)	0.228	62.24*
Perceived Pupil Control Ideology of Principal (PCIPP)	0.241	59.70**

*t = 14.84, d.f. = 472, $p < 0.001$

**t = 10.66, d.f. = 472, $p < 0.001$

TABLE 9

PERCEIVED PUPIL CONTROL IDEOLOGY OF COLLEAGUES AND PRINCIPAL BY SECONDARY TEACHERS

Variable	Standard Error Squared	Mean PCI Score
Pupil Control Ideology (PCITS)	0.215	59.47
Perceived Pupil Control Ideology of Colleagues (PCIPC)	0.259	68.89*
Perceived Pupil Control Ideology of Principal (PCIPP)	0.222	62.20**

*t = 13.69, d.f. = 436, $p < 0.001$

**t = 4.13, d.f. = 436, $p < 0.001$

TABLE 10

PUPIL CONTROL IDEOLOGY OF TEACHERS GROUPED BY EXPERIENCE

Experience	N	Standard Error Squared	Mean PCI Score
Less than five years	338	0.249	52.83
Five years or more	572	0.171	57.83

t = 7.70, d.f. = 337, $p < 0.001$

When teachers were grouped according to teaching experience, their perception of pupil control ideology of colleagues and their principal indicated a trend that is consistent with the data described in the previous section of this study. For each teaching experience category,

colleagues were rated more custodial in control orientation than perceivers. Principals were also perceived as more custodial than teachers. Further, for both teacher groups the difference between teacher and colleague mean PCI scores was even more pronounced than that between teacher and his principal. These trends are shown in Tables 11 and 12. A t-test between means for each group indicated significance in the expected direction at the 0.001 level. It is significant that teachers reporting less than five years experience perceived their colleagues as substantially more custodial than themselves. On the other hand, this difference in perception of colleague control ideology for the more experienced teachers was not so widely divergent. From Tables 11 and 12, it is interesting to observe the apparent "institutionalization" of the teacher. One would conclude from this observation that five years exposure to and incorporation within "the system" would (a) promote custodial tendencies (57.83 - 52.83 = + 5.00) for individuals. (b) temper individuals' perceptions of colleagues (64.78 - 66.91 = - 2.13), and (c) temper individuals' perceptions of the principal (60.57 - 61.57 = - 1.00). Clearly, at least over the initial five-year employment period, one's perceptions of incumbent control ideology moves toward the humanistic, a further buffering effect being the more significant movement of the individual's orientation toward the custodial, the net effect being the development of a remarkably homogeneous ideology, one in which the neophyte would appear atypical, and could be anticipated to be at odds with associates' control ideologies.

Tests for relationships between teacher job satisfaction and the related variables mentioned in this study have been examined in earlier

investigations, e.g., see LaMantia (1969), Plant (1966), Sergiovanni (1966). Based on the conclusions reached from these previous investigations, data reported on teaching position and teaching experience in this study were used to test for a relationship between these variables and job satisfaction.

In the present sample the job satisfaction mean score (SAT) for elementary teachers ($\overline{X}$ = 7137) was compared to the job satisfaction mean score (SAT) for secondary teachers ($\overline{X}$ = 70.30). With 436 degrees of freedom the t-value of 1.99 was significant at the 0.025 level. Teacher job satisfaction is related to teaching position with elementary teachers being more satisfied than secondary teachers. Caution must be exercised in the interpretation of these data since the difference in the respective means is small. Nevertheless, this finding is consistent with the studies previously noted. Table 13 refers to the summary of these data.

Table 14 summarizes the mean job satisfaction scores (SAT) of teacher respondents grouped according to years of teaching experience. Examination of mean job satisfaction scores of teachers with less than five years experience ($\overline{X}$ = 68.77) and teachers with five years or more experience ($\overline{X}$ = 71.98) provided an indication that the more experienced teachers tend to be more satisfied. When the difference between means was tested, the t-value of 5.79 was significant at the 0.001 level. It would appear that as one becomes institutionalized, i.e., becomes control oriented in a manner not dissident with associates, one becomes more satisfied with his professional status.

TABLE 11

PERCEIVED PUPIL CONTROL IDEOLOGY OF COLLEAGUES AND PRINCIPAL BY TEACHERS WITH LESS THAN FIVE YEARS OF EXPERIENCE

Variable	Standard Error Squared	Mean PCI Score
Pupil Control Ideology (PCITS)	0.249	52.83
Perceived Pupil Control Ideology of Colleagues (PCIPC)	0.399	66.91*
Perceived Pupil Control Ideology of Principal (PCIPP)	0.321	61.57**

*$t = 17.47$, d.f. = 337, $p < 0.001$

**$t = 11.58$, d.f. = 337, $p < 0.001$

TABLE 12

PERCEIVED PUPIL CONTROL IDEOLOGY OF COLLEAGUES AND PRINCIPAL BY TEACHERS WITH FIVE YEARS OR MORE EXPERIENCE

Variable	Standard Error Squared	Mean PCI Score
Pupil Control Ideology (PCITS)	0.171	57.83
Perceived Pupil Control Ideology of Colleagues (PCIPC)	0.192	64.78*
Perceived Pupil Control Ideology of Principal (PCIPP)	0.183	60.57**

*$t = 11.53$, d.f. = 571, $p < 0.001$

**$t = 4.61$, d.f. = 571, $p < 0.001$

TABLE 13

JOB SATISFACTION OF TEACHERS
GROUPED BY PRESENT POSITION

Position	N	Standard Error Squared	Mean SAT Score
Elementary Teacher	473	0.117	71.37
Secondary Teacher	437	0.174	70.30

$t = 1.99$, d.f. = 436, $p < 0.025$

TABLE 14

JOB SATISFACTION OF TEACHERS
GROUPED BY EXPERIENCE

Experience	N	Standard Error Squared	Mean SAT Score
Less than five years	338	0.208	68.77
Five years or more	572	9.986	71.98

$t = 5.79$, d.f. = 337, $p < 0.001$

Job satisfaction of teachers has been shown to be related to factors investigated in this study, especially the congruence values. Pupil control ideology variances among professional educators within schools are shown to be associated with variations in expressed job satisfaction values. The

concluding phase of the study was to develop a predictive relationship in which job satisfaction would be the criterion and "internal reward" and "personal" variables would constitute the independent set. The results of this procedure are displayed in Table 15; APPENDIX A is a more detailed explanation of the genesis of Table 15.

The reader will note that some 40% of the variability in SAT scores can be attributed to the reduced set of variables in Table 15. These variables are (1) some of the original measures as defined in APPENDIX B, and (2) "interaction" terms as defined in APPENDIX C. At the bottom of Table 15 is presented the relationship developed for SAT prediction. Given that the well-known "external" rewards have been ignored, the 40% reduction in uncertainty is remarkable; the authors presently are in the process of expanding the model to include variables from the "external" domain.

TABLE 15

The Revised "Internal Rewards" Predictive Model* for Job Satisfaction (SAT) with Selected ($p < 0.05$) AID(4) Interaction and Non-Linear Terms

Criterion: SAT $R^2 = 0.4057$ $R_c^2 = 0.3964$** $F = 43.64$ $SE_{est} = 6.23$ Intercept = 78.13

Variable	Regression Coefficient	Standard Error	Student t	Beta Coefficient	Standard Error of Beta	Partial Correlation	Semi-Partial Correlation
AGE	0.52094	0.15985	3.26	0.08199	0.02833	0.108	0.084
S3	-1.47290	0.33489	4.40	-0.13074	0.02973	-0.145	-0.113
S4	-1.52343	0.38355	3.97	-0.10731	0.02702	-0.132	-0.102
PCITS	0.10239	0.03838	2.67	0.12674	0.04750	0.089	0.069
PCIPC	-0.08211	0.03404	2.41	-0.11225	0.04653	-0.080	-0.062
GPCAT	-0.38538	0.13230	2.91	-0.09347	0.03209	-0.097	-0.075
A1***	-0.04781	0.01306	3.66	-1.77941	0.48620	-0.121	-0.094
A2	0.00373	0.00111	3.37	0.69504	0.20638	0.112	0.087
A3	-0.00512	0.00151	3.39	-0.32948	0.09716	-0.113	-0.087
A4	0.00019	0.00005	3.93	0.43718	0.11111	0.130	0.101
A5	0.00090	0.00031	2.41	1.39506	0.57939	0.080	0.062
A6	0.0002	0.00000	4.69	1.01180	0.21570	0.155	0.121
A7	-0.0001	0.00000	3.90	-1.08341	0.27789	-0.129	-0.100
A8	-0.0000****	0.00000	3.95	-0.78326	0.19812	-0.131	-0.102

*From equation (2):

$$\hat{Y}_j = SAT = 78.13 + 0.52094\,(AGE) - 1.47290\,(S3) - 1.52343\,(S4) + 0.10239\,(PCITS) - 0.08211\,(PCIPC) - 0.38538\,(GPCAT) - 0.04781\,(A1) + 0.00373\,(A2) - 0.00512\,(A3) + 0.00019\,(A4) + 0.00090\,(A5) + 0.00001599\,(A6) - 0.0001430\,(A7) - 0.00000006\,(A8)$$

where the estimated error of prediction = $\pm$ 6.23.

**Corrected for degrees of freedom: $df_{reg} = 14$; $df_e = 895$; N = 910.

***See APPENDIX C for a description of the "A" [AID(4)] variables, A1 - A8.

****Actual values used to eight decimal places shown in "SAT=" above.

SUMMARY

Teacher job satisfaction was found to be directly related to the congruence between the pupil control ideology held by the teacher and the pupil control ideology of colleagues as perceived by the teacher. Teacher job satisfaction was found to be directly related to the congruence between the pupil control ideology held by the teacher and the pupil control ideology of his principal as perceived by the teacher. Both relationships were statistically significant at the 0.001 level. The above relationships remained significant when data for both elementary and secondary teachers were treated separately, although slightly stronger in the case of the former.

When the variables of teaching level and teaching experience were examined in relation to pupil control ideology and job satisfaction, it was found that secondary teachers were more custodial than elementary teachers; and, that teachers reporting five years or more experience were more custodial than teachers reporting less than five years experience.

When teachers were grouped according to teaching level, i.e., elementary and secondary, data indicated that for each group colleagues were perceived as more custodial than the perceiver. Likewise, the principal was perceived as more custodial than the perceiver, but less custodial than colleagues. The data yielded a similar pattern of results when mean PCI scores were evaluated on the basis of teacher experience. For each category of teaching experience, teachers were perceived to be more custodial than they reported themselves to be. The principal was also perceived as more custodial than the perceiver, but less custodial than colleagues.

Results of t-tests on data reported for teaching level indicated that in this sample elementary teachers were more satisfied with their jobs than secondary teachers. When the variable of teaching experience is considered, more experienced teachers tended to be more satisfied than the less experienced teachers.

Predicted values for SAT were obtained from a least squares regression routine; the final model accounted for 40 per cent of the variation in original SAT scores, where reduction in uncertainty was due primarily to internal reward variables. Considerable evidence relative to individual predictors of job satisfaction and their respective contributions was obtained; the predictions included both "main effect" and "interaction" terms. Job satisfaction can be predicted based on certain internal-reward and personal information, and the precision of the estimate could most likely be enhanced by adding external-reward information to the model. Further, there should then be an attempt to relate SAT of some sort with student achievement, i.e., do students attain higher levels of some specified achievement(s) when their instructors are more satisfied professionally?

The study of teacher job satisfaction holds several significant implications for the administrator-teacher-student relationship. Degree of teacher job satisfaction is one determinant of the social climate of the school because, ultimately, productive teaching-learning coexists with congruent administrator-teacher educational philosophy. Identification of those factors which influence teacher job satisfaction is tantamount to administrative practice, for each factor can and should be incorporated into the administrative process to guide further the selection, management, and

evaluation of instructional personnel. A recent study by Rokeach (1971) cites replicated empirical findings supporting the contention that an effective, well-planned in-service program designed to reduce incongruence could be devised, given that essential value-attitude factors could be identified. Therefore, one charge to administrators of contemporary education processes is to identify those factors.

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APPENDIX A

Multivariate Rationale and Procedures

Development of a relationship suitable for predicting job satisfaction was a three-step undertaking, where (1) a preliminary multiple regression analysis was used to (a) generate a basic model, and (b) produce a set of residuals; (2) an interaction analysis of the residuals made possible identification of new terms to be added to the basic model; and (3) a second multiple regression was performed, the results being those displayed in Table 15. Consider the model

$$Y_j = \alpha + \sum_{i=1}^{m} \beta_i X_{ij} + \mu_j \qquad \begin{array}{l}(j = 1,\ldots, n, \text{ the number of samples}) \\ (i = 1,\ldots, m, \text{ the number of independent variables})\end{array} \quad (1)$$

where: Y_j = the SAT score for the jth sample,

α = a constant (the intercept),

β_i = the regression coefficient for the ith independent variable,

X_{ij} = the value for the ith independent variable for the jth sample,

μ_j = a stochastic disturbance term,

as a general model, and

$$\hat{Y}_j = \hat{\alpha} + \hat{\beta}_1 X_{1j} + \hat{\beta}_2 X_{2j} + \ldots + \hat{\beta}_i X_{ij} \quad (2)$$

where: $\hat{Y}_j$ = an estimate of Y for the jth sample,

$\hat{\alpha}$ = an estimate of the structural parameter α,

$\hat{\beta}_i$ = an estimate of the structural parameter β_i for the ith independent variable,

X_{ij} = the ith independent variable for the jth sample,

as the estimation model,

then, the residual $\mu_j = Y_j - \hat{Y}_j$. That is to say, some portion of Y_j can be "explained" by equation (2), but--unless $R^2 = 1.00$--there usually will be some part of Y_j not "explainable" by applying the above mentioned technique. A "residual", the unexplained part of Y_j, is left to be analyzed in multivariate step two.

The residuals were then submitted to an "interaction" analysis (AID--Automatic Interaction Detection, a nonsymmetrical branching process) as described by Sonquist and Morgan (1970). From step one we obtain the μ_j values (the "unexplained" part of Y_j) and now treat these values as elements of a criterion vector suitable for further analysis. The purpose of this analysis phase is to identify terms which when added to equation (2) will (a) reduce the magnitude of the resultant μ_j values (reduce the error sum of squares), and (b) increase R^2, the square of the multiple correlation coefficient. The terms to be added are deduced in the usual manner by evaluation of the AID computer output. These AID terms are either transformations (e.g., X_{ij}^2) or interactions (e.g., $X_{ij}X_{kj}$, $i \neq k$), terms not easily obtained on the basis of theoretical positions, above. The net effect of step two is to expand equation (2) by adding the new terms, the result being--if any AID terms observed are "significant"--realization of the two desirable properties identified above, and maximization of prediction (given the input set) is obtained. In the present study, it was decided that only those additional terms from the analysis of residuals would be considered; thus, the effect of expanding equation (2) is additive: the amount of variance in SAT attributed to step one independent variables is retained and added to the reduction in uncertainty as observed from adding step two terms.

AID is a branching process based upon selection of a group i, such that partitioning i into two non-overlapping groups will generate significant information in terms of "explaining" criterion variation. Several parameters may be selected so as to control the splitting of group i including (a) the proportion of the total sum of squares that relates to the split of i, (b) the maximum number of final groups, and (c) the minimum number of observations which would constitute a "group", i.e., a group must have a certain number before it may serve as a candidate for splitting. Since residuals were the units for analysis, split criterion (c) was used to control the process, (a) and (b) were given values such that they would not be reached before (c) was violated. The minumum number of observations was set at twenty (20); any candidate group for splitting would have to contain at least forty (40) elements: a twenty-twenty split would be the only possibility. Criterion (c) was chosen predicated by the researchers' desire to retain a reasonable number of elements per group and within this context to maximize the potential for detection of significant sub-groups partitions.

One of the objectives of the present study was to structure a relationship in which the criterion of interest--SAT--would be the dependent variable and the data collected on other variables from the sample would constitute an independent set, the values being arranged as shown in equation (2), APPENDIX A above. From this process, estimates of α and β_i would be obtained, and some portion of the variability in the SAT scores observed would be "explained" by the associations with elements of the independent set. Data used for developing the relationship [equation (2)

is the model] are presented summarily in Table 16; intercorrelations among all variables are presented in Table 17.

Initially, using SAT as the criterion with eighteen predictors (independent variables as from above), a "step-down" least squares multiple linear regression (LSLR) was conducted. Variable 1--school district--was deleted from the independent variable set used to estimate α and the β_i. In this context deletion of independent variables from the model is controlled by the t-ratio for each regression coefficient. That is to say, if the t-ratio observed is not equal to or greater than some a priori value, the variable will be deleted; the model is then recomputed, and once again a check of the t-ratios is made to select again any one variable whose contribution fails to meet the standard. The computer run made to evaluate the relationship of interest was controlled by setting the cut-off criterion equal to 0.50, where cursory parsimony was achieved without over-deletion. The results of this procedure are presented in Table 18.

Using the 0.50 value to regulate deletion, variables 9 (GRADPRP), 6 (TECHR), 16 (PCIPP), 8 (UNPRP), and 7 (AMTED) were removed from further consideration; all values shown in Table 18 were obtained following removal of variable 7 (AMTED). The order in which these variables were deleted is shown immediately above. The choice of the t-ratio cut-off was purely arbitrary, and was selected at 0.50 only to eliminate from the model those variables whose contribution to the prediction was minimal. Another, say, more stringent criterion would have further reduced the model, but, perhaps, at the expense of loss of predictive associations of appreciable

interest in the study. Other step one models were examined. Using all nineteen variables as a "full model," an $R^2 = 0.3379$ was computed (R^2 corrected = 0.3246); c.f. Table 18, $R^2 = 0.3378$ and $R_c^2 = 0.3281$. The reader should recall that those variables used to create Table 18 were of two types: (1) "internal reward" and (2) "personal". None of the traditional "external rewards" were included for analysis. Nevertheless, multiple correlation of about 0.57 was obtained. A perusal of the available literature and of the data collected, however, suggested that some significant interactions and non-linear possibilities might be available for identification and use in an expanded version of the "internal rewards" predictive model as shown in Table 18.

The Automatic Interaction Detection level four computer routine [AID (4)] was invoked, the purpose being to extract those terms which when added to the earlier predictive model just discussed would add significantly to the amount of SAT variability explained. Criterion values submitted for analysis were the individual residuals from the LSLR multiple regression as shown in Table 18. Thus, only the error sum of squares was used for interaction and non-linear term identification. An earlier trial AID(4) run on the original SAT scores indicated an R^2_{max} for these data of about 0.45. If accepted, this would mean that between the AID(4) forecast of 0.45 and the Table 18 model estimate of about 0.33 there might be as much as 12% of the SAT variability available across the independent set but as yet untapped. Anticipating a productive resolution, the appropriate AID(4) computer input of residuals was prepared and submitted.

The printed output from AID(4) is far too voluminous to include here, and, further, does not lend itself especially well to dissection for partial inclusion. Therefore, the authors chose not to attempt any

TABLE 16

Summary Statistics for Data* Used in the Multivariate Analyses

Variable	Mean	Standard Division	Standard Error	Skewness	Kurtosis
1. SCHDIST	3.28	1.77	0.06	0.15	-0.62
2. SEX	1.62	0.49	0.01	0.27	-0.82
3. MARTST	1.79	0.62	0.02	0.39	1.04
4. AGE	2.34	1.42	0.05	0.28	-0.54
5. PSTPOS	1.50	0.53	0.02	0.14	-0.60
6. TEACHER	11.46	10.86	0.36	0.54	0.10
7. AMTED	3.02	1.05	0.03	0.08	0.06
8. UNPRP	1.05	0.45	0.01	0.10	0.94
9. GRADPRP	0.70	0.61	0.02	0.14	-0.32
10. S1	1.70	0.77	0.03	0.27	0.16
11. S2	1.44	0.63	0.02	0.41	0.20
12. S3	1.45	0.71	0.02	0.57	0.66
13. S4	1.40	0.57	0.02	0.31	0.04
14. PCITS	55.97	9.93	0.33	0.07	0.12
15. PCIPC	65.57	10.97	0.36	0.04	-0.06
16. PCIPP	60.94	10.31	0.34	0.07	0.00
17. CS1	11.52	10.41	0.35	0.64	0.88
18. CS2	8.55	8.42	0.28	0.94	2.40
19. SAT	70.79	8.02	0.27	0.63	3.55
20. GPCAT	2.18	1.95	0.06	0.98	1.63

*N = 910. For a complete description of these variables, see APPENDIX B.

TABLE 17

Zero-Order Correlations for Twenty Variables*

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1. SCHDIST																				
2. SEX	04																			
3. MARTST	06	-02																		
4. AGE	10	15	26																	
5. PSTPOS	-03	-37	06	-06																
6. TEACHER	07	13	14	84	-09															
7. AMTED	-12	-33	-01	-09	34	-03														
8. UNPRP	-06	-17	-02	-23	25	-27	31													
9. GRADPRP	-07	-26	-06	-16	25	-10	52	37												
10. S1	-07	-13	-03	-25	14	-25	07	16	06											
11. S2	-07	-13	05	-13	15	-14	13	15	17	33										
12. S3	-07	-07	-02	-24	15	-23	04	13	08	29	47									
13. S4	-04	-11	00	-08	10	-13	01	10	02	37	27	25								
14. PCITS	00	-19	07	27	29	25	00	-08	-02	01	-04	-07	06							
15. PCIPC	11	-20	-01	-12	32	-14	06	06	11	11	18	20	06	31						
16. PCIPP	22	-10	-02	-02	13	-05	-05	-02	05	06	11	25	39	42	52					
17. CS1	06	-05	-06	-30	10	-29	10	14	17	08	25	28	00	-36	55	20				
18. CS2	17	01	-09	-27	-03	-25	01	10	07	09	18	40	00	-32	26	48	57			
19. SAT	-05	11	09	27	-07	25	-04	12	-09	-17	-20	-37	-14	13	-27	-26	-42	-50		
20. GPCAT	-13	04	05	20	01	22	-01	-05	-05	-07	-07	-16	-02	29	-28	-17	-39	-32	18	

*N=910. All intercorrelations shown without leading zero and decimal point and rounded to nearest one-hundredth. See APPENDIX B for a full description of each variable.

TABLE 18

An "Internal Rewards" Predictive Model* for Job Satisfaction (SAT) with no Interaction Terms

Criterion: SAT $R^2 = 0.3378$ $R^2_{co} = 0.3281$** $F = 35.15$

$SE_{est} = 6.58$ Intercept = 79.27

Variable	Regression Coefficient	Standard Error	Student t	Beta Coefficient	Standard Error of Beta	Partial Correlation	Semi-Partial Correlation
SEX	1.06088	0.49573	2.14	0.06446	0.03012	0.071	0.058
MARTST	0.38615	0.36785	1.05	0.02975	0.02834	0.035	0.029
AGE	0.46546	0.17951	2.59	0.08220	0.03170	0.086	0.070
PSTPOS	0.33284	0.47323	0.70	0.02208	0.03140	0.023	0.019
S1	-0.35747	0.32790	1.09	-0.03411	0.03129	-0.036	-0.030
S2	0.32370	0.41520	0.78	0.02538	0.03256	0.026	0.021
S3	-1.74854	0.38283	4.57	-0.15521	0.03398	-0.151	-0.124
S4	-1.18708	0.42720	2.78	-0.08361	0.03009	-0.092	-0.076
PCITS	-0.03727	0.03444	1.08	-0.04613	0.04263	-0.036	-0.029
PCIPC	-0.02029	0.03337	0.61	-0.02773	0.04562	-0.020	-0.017
CS1	-0.14910	0.03708	4.02	-0.19351	0.04813	-0.133	-0.109
CS2	-0.30731	0.00384	9.08	-0.32261	0.03552	-0.290	-0.247
GPCAT	-0.18326	0.13992	1.41	-0.04445	0.03151	-0.047	-0.038

*From equation (2):

$\hat{Y}_j$ = SAT = 79.27 + 1.06088 (SEX) + 0.38615 (MARTST) + 0.46546 (AGE) + 0.33284 (PSTPOS)
- 0.35747 (S1) + 0.32370 (S2) - 1.74854 (S3) - 1.18708 (S4) - 0.03727 (PCITS)
- 0.02029 (PCIPC) - 0.14910 (CS1) - 0.30731 (CS2) - 0.18326 (GPCAT)

where the estimated error of prediction = $\pm$ 6.58.

**Corrected for degrees of freedom: $df_{reg} = 13$; $df_e = 896$; N = 910.

comprehensive presentation of AID(4) output herein, but will provide interested persons of whatever they request, as is within our capability. Let it suffice here to state that examination of the "tree structure" generated by AID(4) was somewhat as expected, that the original "tree" was quite complete, beyond the intent of this investigation, and that the terms generated proved to be both interaction and non-linear by type. The tree structure was evaluated and "pruned" to a manageable, interpretable length. The three criteria used to regulate the extent of "splitting" in the AID(4) algorithm were set such that the "minimum number per group" criterion would dominate; the minimum number was set at twenty (20). Figure 2 is the "pruned tree structure" from which additional terms were derived for input to a second regression analysis of the expanded model [equation (2)]. The reader should note that the tree structure used later to construct the expanded model included additional terms from the variables SCHDIST, AGE, GRADPRP, PCITS, PCIPP, CS1, CS2. By observation, constructing the appropriate terms to add to the model used follows from Figure 2. The procedure used here was that in Koplyay et al. (1971). All groups identified by the AID(4) process were shown to have probabilities of less than 0.05. The final step to the analysis was a step-down multiple regression over the expanded model [of equation (2)] as presented in Table 15. The criterion used to evaluate t-ratios was set at 1.96.

Recall that the AID(4) analysis--where SAT raw score values were the dependent variable input-- projected some 45 percent of the variability in SAT scores to be associated with the original set of independent variables

used; and, a step-down multiple linear regression produced an R^2 of about 0.33. It was concluded that a subsequent analysis of the residuals $(Y_j - \hat{Y}_j)$ would make possible utilization of at least some part of this obtainable but as yet untapped information. Certain terms were constructed for this purpose and a second step-down, LSLR multiple regression was performed. The R_c^2 for the final step was about 0.40, meaning that of the projected 12 percent of obtainable explanatory power about 7 percent had been identified in terms of appropriate interactions and non-linear relationships. It is worthwhile to note that of the thirteen variables used in step one, only six remain in step three (see Tables 15, 18), and that the t-ratios shown in Table 18 do not forecast the likelihood of reappearance in Table 15. Thus, addition of the appropriate AID(4) terms influences the relative importance of the variables used in step one. Further, the reader should be cautioned against assuming, erroneously, from Table 15 that such variables as, say, CS1 (t=4.02), CS2 (t=9.08), etc., are of no importance in predicting SAT; but rather it should be assumed that their absence from Table 15 is simply a manifestation of the magnitude of the relationship between such variables and the terms as from AID(4) in this example. In fact, assuming the issue of multicollinearity to be trivial, it could be shown that these variables would make some contribution to explaining SAT variability in a model not totally dissimilar from that presented in Table 15.

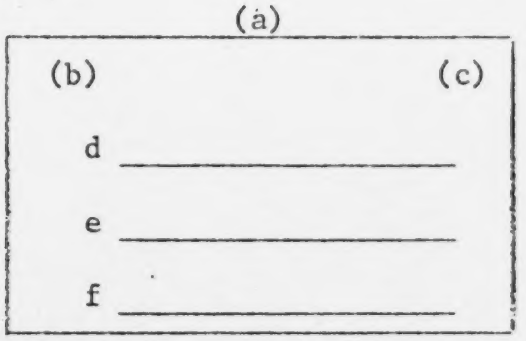
What about the remaining 5 percent (45 - 40 = 5)? Only those "splits" from AID(4) known to be associated with probabilities of less than 0.05

were selected for further use. Had all the AID(4) terms been used an $R^2_{AID(4)}$ = 0.43 + was possible, but serious problems (e.g., multicollinearity, interpretation, etc.) would surely have proved to be prohibitive to such an undertaking. Clearly, analysis of the residuals was not the same as analysis of the observed SAT raw scores. And, scaling of the independent variables for AID(4) input is subject to review.

One's job satisfaction (SAT) as measured using the Brayfield and Rothe (1951) Index of Job Satisfaction can be predicted by using internal reward and personal data, as collected in the present investigation: some 40 percent of the variability in SAT scores can be accounted for by the independent variables used in the second step LSLR. A much-needed extension to the model is possible, where "several" well-known external reward (ER) variables would be added to the step two model herein. In this model three sources of explanatory power might be analyzed: internal rewards and external rewards (system-oriented variables), and personal data.
In the step two model, the importance of internal-reward (IR) variables cannot be overlooked: variables S3, S4, PCITS, PCIPC and GPCAT are proxies for direct IR measures, and only AGE of the personal variables is centered. Moreover, of the AID(4) additions, only SCHDIST is not an IR type. If one was to couple the appropriate ER variables with those IR variables from the present study, a remarkably strong relationship with SAT might well be the result. Prediction of SAT should achieve a high level of refinement.

Figure 2. AID(4) Tree Structure (Pruned) Selected when Step One Residuals were the Criterion Values [Read (n) as Group Number; Left to Right Split Presentation]. See APPENDIX C for the Conversion from "Tree Structure" to Input Variables.

where:



a - the group number
b - the variable being used for the split;
c - coded group membership (available from the authors)
d - the mean of those coded in this group
e - the standard deviation
f - the number of samples in the group.

[See continued Table on next page]

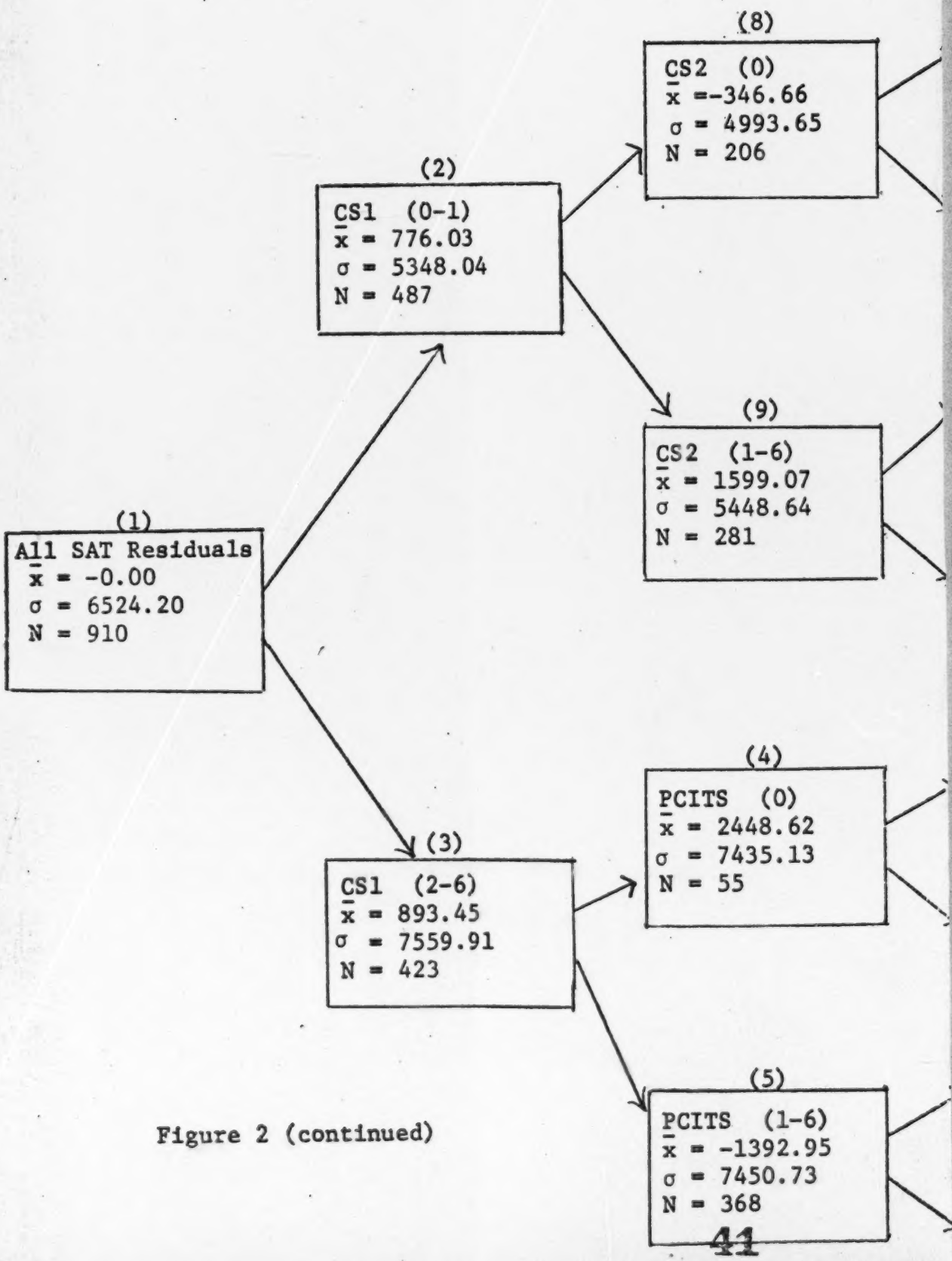
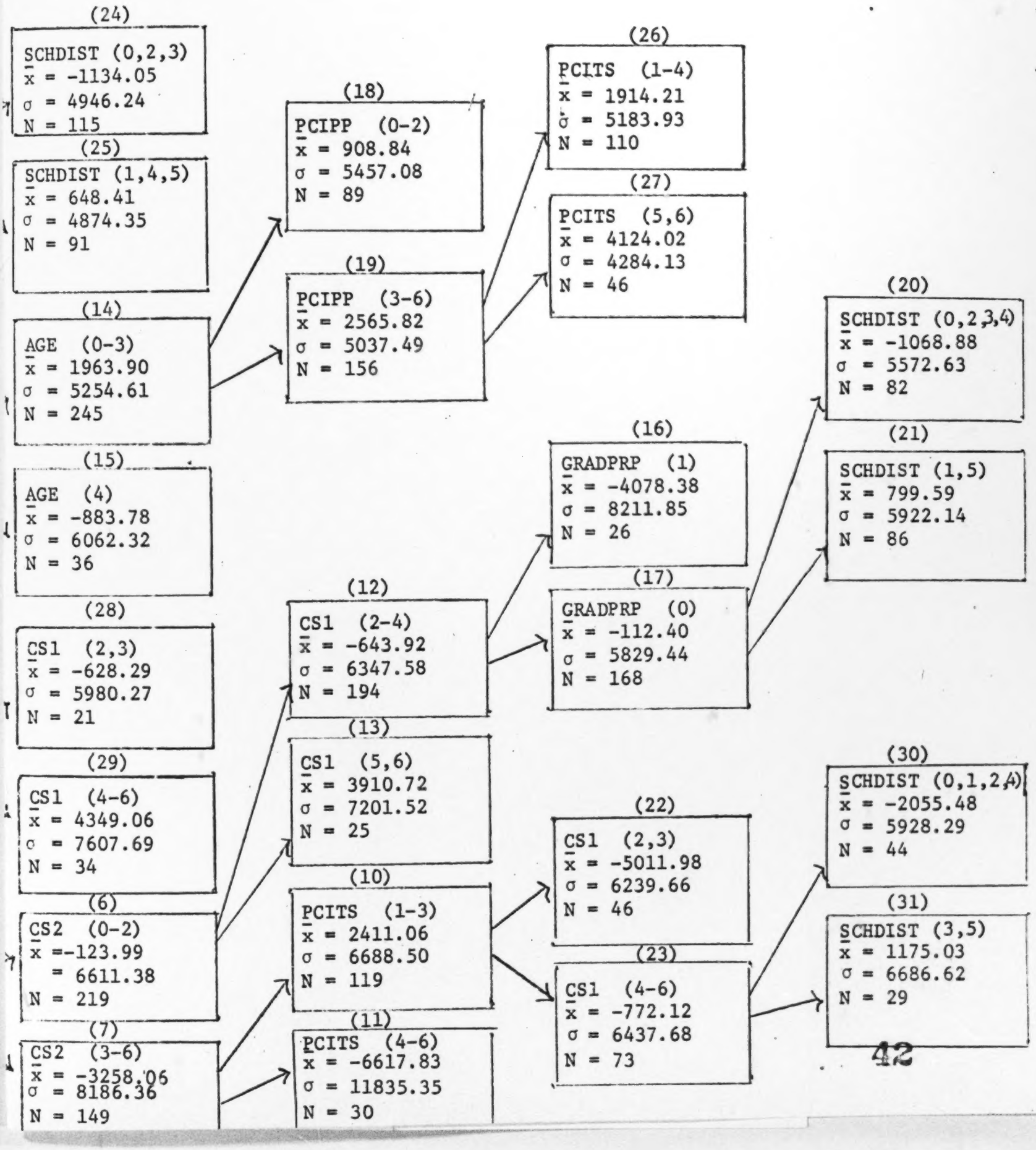


Figure 2 (continued)


(24)
SCHDIST (0,2,3)
x̄ = -1134.05
σ = 4946.24
N = 115
(25)
SCHDIST (1,4,5)
x̄ = 648.41
σ = 4874.35
N = 91
(14)
AGE (0-3)
x̄ = 1963.90
σ = 5254.61
N = 245
(15)
AGE (4)
x̄ = -883.78
σ = 6062.32
N = 36
(28)
CS1 (2,3)
x̄ = -628.29
σ = 5980.27
N = 21
(29)
CS1 (4-6)
x̄ = 4349.06
σ = 7607.69
N = 34
(6)
CS2 (0-2)
x̄ =-123.99
= 6611.38
N = 219
(7)
CS2 (3-6)
x̄ = -3258.06
σ = 8186.36
N = 149
(18)
PCIPP (0-2)
x̄ = 908.84
σ = 5457.08
N = 89
(19)
PCIPP (3-6)
x̄ = 2565.82
σ = 5037.49
N = 156
(12)
CS1 (2-4)
x̄ = -643.92
σ = 6347.58
N = 194
(13)
CS1 (5,6)
x̄ = 3910.72
σ = 7201.52
N = 25
(10)
PCITS (1-3)
x̄ = 2411.06
σ = 6688.50
N = 119
(11)
PCITS (4-6)
x̄ = -6617.83
σ = 11835.35
N = 30
(26)
PCITS (1-4)
x̄ = 1914.21
σ = 5183.93
N = 110
(27)
PCITS (5,6)
x̄ = 4124.02
σ = 4284.13
N = 46
(16)
GRADPRP (1)
x̄ = -4078.38
σ = 8211.85
N = 26
(17)
GRADPRP (0)
x̄ = -112.40
σ = 5829.44
N = 168
(22)
CS1 (2,3)
x̄ = -5011.98
σ = 6239.66
N = 46
(23)
CS1 (4-6)
x̄ = -772.12
σ = 6437.68
N = 73
(20)
SCHDIST (0,2,3,4)
x̄ = -1068.88
σ = 5572.63
N = 82
(21)
SCHDIST (1,5)
x̄ = 799.59
σ = 5922.14
N = 86
(30)
SCHDIST (0,1,2,4)
x̄ = -2055.48
σ = 5928.29
N = 44
(31)
SCHDIST (3,5)
x̄ = 1175.03
σ = 6686.62
N = 29

APPENDIX B

Measured-Variable Definitions

1.	SCHDIST	1-6	School Districts Sampled
2.	SEX	1-2	Sex (1) Male (2) Female
3.	MARTST	1-4	Marital Status: (1) Single (2) Married (3) Widow(er) (4) Separated or divorced
4.	AGE	1-5	Age: (1) 20-29 years (2) 30-39 years (3) 40-49 years (4) 50-59 years (5) 60-69 years
5.	PSTPOS	1-3	Present Position: (1) Elementary teacher (2) Secondary teacher (3) Other
6.	TECHR	1-4	Experience as an Educator: (1) Years as a teacher (2) Years as a principal or superintendent (3) Years as guidance counselor (4) Years as other
7.	AMTED	1-6	Amount of Education: (1) Less than bacheolor's degree (2) Bachelor's degree (3) Bachelor's degree plus additional credits (4) Master's degree (5) Master's degree plus additional credits (6) Doctor's degree

Acronym	Scaling	Description
8. UNPRP	1-2	Undergraduate Preparation: (1) Major within the field of education (2) Major in area outside the field of education
9. GRADPRP	1-2	Graduate Preparation: (1) Major within the field of education (2) Major in area outside the field of education
10. S1	1=4	Satisfaction Derived from Relationships with Parents and Parent Groups (1) Very satisfied (2) Fairly satisfied (3) Somewhat dissatisfied (4) Very dissatisfied
11. S2	1-4	Satisfaction Derived from Relationships with Fellow Staff Members (1) Very satisfied (2) Fairly satisfied (3) Somewhat dissatisfied (4) Very dissatisfied
12. S3	1-4	Satisfaction Derived from Relationships with the School Principal (1) Very satisfied (2) Fairly satisfied (3) Somewhat dissatisfied (4) Very dissatisfied
13. S4	1-4	Satisfaction Derived from Relationships with Individual Children (1) Very satisfied (2) Fairly satisfied (3) Somewhat dissatisfied (4) Very dissatisfied
14. PCITS	20-100	Teacher-Self Pupil Control Ideology Score
15. PCIPC	20-100	Teacher-Perceived Pupil Control Ideology Score of Colleagues.
16. PCIPP	20-100	Teacher-Perceived Pupil Control Ideology Score of the Principal.

	Acronym	Scaling	Description
17.	CS1	± 80	A congruency score that is the absolute value of the difference between teacher-self PCI score and the teacher-perceived PCI score of colleagues.
18.	CS2	± 80	A congruency score that is the absolute value of the difference between teacher-self PCI score and the teacher--perceived PCI score of the principal.
19.	SAT	18-90	A teacher's "overall" job satisfaction score.
20.	GPCAT	1-4	Groups of scores categorized according to the directional difference, if any; between CS1 and CS2 scores as follows: (1) When CS1 is plus (+) and CS2 is plus (+). (2) When CS1 is minus (-) and CS2 is minus (-). (3) When CS1 is plus (+) and CS2 is minus (-). (4) When CS1 is minus (-) and CS2 is plus (+).

APPENDIX C

AID(4) - Variable Definitions

Variable		
1.	A1	CS1 X CS2
2.	A2	CS1 x CS2 X SCHDIST
3.	A3	CS1 X PCITS
4.	A4	CS1 X CS1 X PCITS
5.	A5	CS1 X CS2 X PCITS
6.	A6	CS1 X CS1 X CS2 X PCITS
7.	A7	CS1 X CS2 X PCITS X PCITS
8.	A8	CS1 X CS1 X CS2 X PCITS X PCITS X SCHDIST